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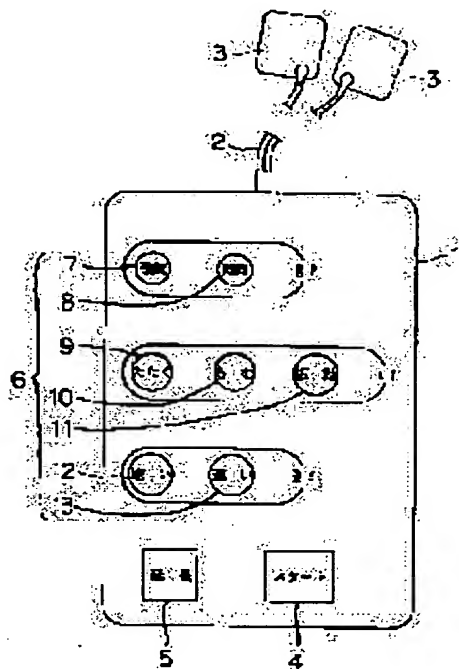
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(54) THERAPEUTIC UNIT

(57)Abstract:

PROBLEM TO BE SOLVED: To conduct an extended therapeutic operation instructed beforehand or during the therapy by providing an instructing means instructing the operating time extension of an optional therapeutic action and a control means extending the operating time of the instructed therapeutic action.

SOLUTION: One desired therapeutic action is selected among a parameter switch group 6 before the operation of a therapeutic unit is started. When the rubbing mode is selected and a rubbing switch 10 is pushed, for example, electric power is fed to a microcomputer, and the signal from the switch 10 is inputted to the microcomputer. When an extension operation instructing switch 5 is pushed, the operating time extension for the rubbing therapeutic action is stored in the microcomputer. After a start switch 4 is pushed, the therapeutic unit conducts an extended operation only when the parameter rubbing mode instructed in the program is outputted, i.e., the normal 15-sec therapeutic current is extendedly outputted for 30 sec, then, this rubbing mode is switched to the next therapeutic mode.



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CLAIMS

[Claim(s)]

[Claim 1] The therapy machine carry out having prepared the control means extend the operation time of the therapy actuation as which it was instructed in the program when it has an extended operation directions means direct extension of the operation time of therapy actuation of arbitration, in the therapy machine with an automatic course which performs therapy actuation based on the program defined beforehand with two or more parameters and extension of operation time is directed by said extended operation directions means as the description.

[Claim 2] The parameter of the arbitration directed by said extended operation directions means is a therapy machine according to claim 1 characterized by directing the class of therapy.

[Claim 3] The parameter of the arbitration directed by said extended operation directions means is a therapy machine according to claim 1 characterized by directing the strength of a therapy.

[Claim 4] The parameter of the arbitration directed by said extended operation directions means is a therapy machine according to claim 1 characterized by directing a therapy location.

[Claim 5] Said control means is a therapy machine according to claim 1 characterized by receiving before treating directions of said extended operation directions means.

[Claim 6] Said control means is a therapy machine according to claim 1 characterized by carrying out extended operation of the therapy actuation which received directions of said extended operation directions means during the therapy, and directed said extended operation directions means.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to therapy machines which perform various kinds of therapy actuation based on the program which consists of two or more parameters, and which was defined beforehand, such as a chair type massage machine and a low-frequency massage device.

[0002]

[Description of the Prior Art] Conventionally, if massage actuation of arbitration is repeatedly directed by the directions means in a massage machine with an automatic course function during therapy actuation and the so-called massage actuation, working massage actuation is performed repeatedly, as this kind of therapy machine is shown in a chair type massage machine given in JP,6-327739,A (A61H23/02), the next massage actuation continues in accordance with a program, and the thing of operating is known after that.

[0003] Usually, a class, strength, etc. of massage actuation which the location was decided by people, respectively and a thing called stiffness of the body senses that people are comfortable were decided.

[0004] However, only when it specified in a program that it is the therapy machine mentioned above, extended operation was carried out, but in the part it is sensed that is refreshing, it always had to specify with a switch, and actuation became troublesome.

[0005]

[Problem(s) to be Solved by the Invention] This invention was made in view of the above-mentioned fault, is easy actuation, and makes it a technical problem to offer the therapy machine which can perform a refreshing therapy.

[0006]

[Means for Solving the Problem] When it has an extended operation directions means direct extension of the operation time of therapy actuation of arbitration, in the therapy machine with an automatic course which performs therapy actuation based on the program defined beforehand with two or more parameters and extension of operation time is directed by said extended operation directions means according to claim 1 of this invention, it carries out having prepared the control means extend the operation time of the therapy actuation as which it was instructed in the program as the description.

[0007] Moreover, according to claim 2, the parameter of the arbitration directed by said extended operation directions means is characterized by directing the class of therapy.

[0008] And according to claim 3, the parameter of the arbitration directed by said extended operation directions means is characterized by directing the strength of a therapy.

[0009] Furthermore, according to claim 4, the parameter of the arbitration directed by said extended operation directions means is characterized by directing a therapy location.

[0010] Moreover, according to claim 5, said control means is characterized by receiving, before treating directions of said extended operation directions means.

[0011] And according to claim 6, said control means receives directions of said extended operation directions means during a therapy, and is characterized by carrying out extended operation of the therapy actuation which directed said extended operation directions means.

[0012] According to this invention, the program of an automatic course is made by combination, such as a parameter of locations, such as a parameter of strength, such as a little more than [a parameter of the class of therapy, such as two or more parameters, for example, "it rubs", and "striking", / "a little more than"], and "weakness", a "shoulder", the "back", and the "waist", and therapy actuation performs based on the program defined beforehand. And if "it strikes" of the therapy actuation of arbitration, for example, the parameter of a therapy class, is chosen by the extended operation directions means, when it is the therapy of "striking" in a program, the usual operation time currently programmed will be extended, and it will operate for a long time than usual. Moreover, when a little more than [of the parameters of strength / "a little more than"] is chosen and it is the therapy of the "a little more than" in a program, the usual time amount currently programmed is extended and it operates for a long time than usual.

[0013] Thus, a more refreshing therapy can be performed by directing extension of the operation time of the therapy actuation it is sensed that is comfortable.

[0014] Moreover, it can concentrate on a therapy by specifying the therapy actuation which wants to extend operation time before therapy actuation, without performing troublesome actuation during a therapy.

[0015] Furthermore, also when the actuation which carried out the slowing length of the therapy actuation at the time of predetermined, operated, and was directed performs by the subsequent program by operating an extended operation directions means when sensing during a therapy that it is comfortable, it operates by time amount longer than the setup time. By this, when there is a therapy it is sensed during a therapy that is comfortable, it can treat for a long time than usual, and a refreshing therapy can be performed.

[0016]

[Embodiment of the Invention] A low-frequency massage device is explained to an example for the gestalt of operation of this invention.

[0017] In drawing 2, 1 is the body of a low-frequency massage device which contains the control board which outputs low frequency current, and the code 2 for passing on

the body the low frequency current outputted from a body 1 is connected to this body 1, and the electrode 3 which has adhesiveness is formed at the tip of said code 2 for two per every sheet, respectively. Moreover, the predetermined program about therapy actuation is given to the control board built in said body 1, and a therapy current will be altogether performed in accordance with this program.

[0018] A signal is inputted into the microcomputer 17 which 4 is the start switch which consists of a normally open switch, and is later mentioned by pressing down this start switch 4.

[0019] It is the extended operation directions switch operated to continue 5 for a long time than the time amount which had favorite therapy actuation programmed, and this extended operation directions switch 5 carries out extended operation in the therapy actuation when could specify the parameter which wants to extend therapy time amount, when the therapy was not started, and operating it, when it is the middle of being a therapy. Said extended operation directions switch 5 is also constituted by the normally open switch as well as said start switch 4.

[0020] 6 is the parameter switch group which can be set up so that it may operate by time amount longer than the therapy time amount on which it decided by the program by consisting of a normally open switch and operating it together with said extended operation directions switch 5.

[0021] 7 is a strong switch of the switch groups which set up the magnitude of the strength of a therapy which is one of said the parameter switch groups 6, i.e., a therapy electrical potential difference, and 8 is a weak switch.

[0022] 9 is the switch of the switch groups which are one of said the parameter switch groups 6 and which set up the mode to strike, and the switch which 10 massages, and 11 are vibration switches. Here, the mode which the mode to strike is the mode outputted while reversing a polarity for every pulse with a predetermined period, and is rubbed generates a group pulse with a predetermined period, and it says that by which the one group pulse changes from a small value to a large value. Furthermore, the oscillation mode generates a group pulse with a predetermined period, and there are few pulse numbers of the group pulse than the mode to rub.

[0023] 12 is a quick switch of the switch groups which set up the speed of the therapy pulse which is one of said the parameter switch groups 6, and the so-called frequency, and 13 is a late switch. It being quick is [of this quick switch 12] that a pulse is outputted a short period, and that it is late says [of the late switch 13] that a pulse outputs a long period.

[0024] Next, the block diagram of a control circuit is explained based on drawing 3 .

[0025] 14 is the power source of a control circuit and the 12-volt cell is connected.
[0026] 15 is a voltage stabilizer for lowering the pressure of supply voltage to 5 volts, in order to operate the microcomputer 17 mentioned later.

[0027] The therapy current which 16 is an amplifying circuit for amplifying to the electrical potential difference which can treat the therapy signal outputted from the microcomputer 17 mentioned later, and was amplified by this amplifying circuit 16 is outputted to an electrode 3.

[0028] 17 is the control means which inputs the signal from said start switch 4, the extended operation directions switch 5, and said parameter switch group 6, and outputs a therapy signal based on the signal, i.e., a microcomputer, (henceforth a microcomputer).

[0029] Actuation of the low-frequency massage device of this invention is explained to below based on drawing 1 and drawing 4 including actuation of said microcomputer 17.

[0030] First, actuation of an anticipated-use condition is explained.

[0031] When starting use, by pushing the start switch 4 (S1), a power source is supplied to a microcomputer 17 and actuation is started (S2). And based on the program which is shown in drawing 1 a and which was defined beforehand, the mode operates for 15 seconds by setup which "it rubbing" and strength say "weakness" and speed says, "Is late." And this termination operates the mode for 15 seconds by setup which is the following program and which "it striking" and strength say "weakness" and speed says, "Is late." Then, a therapy will be ended, if low frequency current is outputted with the output based on a sequential program and the output by the program continues to the last, as shown in drawing 1 (S3).

[0032] Next, before starting a therapy, the case where the directions which extend the operation time of favorite therapy actuation with the extended operation directions switch 5 are carried out is explained.

[0033] Before starting use, one therapy actuation [one] in a favorite parameter is chosen from the parameter switch groups 6. In this example, it chooses "it rubbing" in the mode. At this time, while a power source is supplied to a microcomputer 17 by pressing down the switch 10 to massage, the signal from the switch 10 massaged on a microcomputer 17 is inputted. At this time, within a microcomputer 17, it judges whether the inputted signal is a signal from the start switch 4, and a signal from the extended operation directions switch 5 (S1, S4), and the signal from the switch 10 which judged that it was a signal from the parameter switch group 6 when there is nothing, and was pushed by any signal and to massage is inputted into a

microcomputer 17 (S5). And the signal inputted into a degree is restricted when it is waiting and a signal from the extended operation directions switch 5 (S6), and memory of therapy actuation of slowing length being "rubbing" at the time of operation is carried out (S7). However, if the extended operation directions switch 5 is not pushed but the start switch 4 is pushed, extended operation will be canceled without carrying out memory, and will return first (S8). Moreover, if the extended operation directions switch 5 is not pushed but the parameter switch group 6 is pushed again (S8), the data pushed before will be canceled and the newest data will be inputted as a parameter (S5). If memory of the parameter of slowing length is carried out at the time of operation and the start switch 4 is pushed, when outputting the parameter directed in the program, and the mode "is rubbed" in this example, extended therapy operation which restricts and carries out extended operation will be performed (S10). For example, a therapy current outputs for 15 seconds in the mode "will be rubbed" first based on a program if the start switch 4 is pushed as shown in drawing 1 b. Since this mode "to rub" is directing extended operation before therapy initiation, it extends, and operates for 30 seconds and it changes to the following mode of "striking." It usually passes along the output in this mode, and it is outputted for 15 seconds. Then, in accordance with the program, the contents of a therapy change one by one. And when there is the mode "to rub" in the middle of a program, extended operation will be performed altogether and it will output for 30 seconds. At this time, it is outputted as a program about strength or speed. And the output of a therapy current stops in the place which performed the program to the last.

[0034] Next, the case where other therapy actuation is chosen is explained based on drawing 1 c.

[0035] In this example, the extended operation directions of the strength of "a little more than" are carried out, and when "a little more than" is outputted into a program, extended operation is performed. If the extended operation directions of "a little more than" are carried out and the start switch 4 is pushed, as shown in drawing 1 c, it will operate for 15 seconds by the strength of "weakness" in the mode "to rub." Next, it operates by the strength of "weakness" in the mode "to strike", and when it becomes "a little more than" operation in the following "oscillating" mode, operation is extended for operation for 15 seconds in 30 seconds. And when it becomes "a little more than" operation by the subsequent program, it is extended from 15 seconds at 30 seconds, and the program is performed. And when a program performs to the last, the output of a therapy current stops.

[0036] Next, while carrying out the sequential output of the therapy current based on

the program, the case where the extended operation directions switch 5 is pushed is explained.

[0037] While the user is treating, the extended operation directions switch 5 is pressed down during an output to treat in the therapy actuation moreover in the place it is sensed that is comfortable for a long time than usual. At this time, therapy operation under output changes to operation for 30 seconds after operation for 15 seconds of the usual program, and therapy operation of hope extends and is outputted.

[0038] Like the example mentioned above also in this case, when the same therapy actuation is outputted by the subsequent program, even if it does not push the extended operation directions switch 5, extended operation is carried out automatically. And if all programs perform, the output of a therapy current will stop and a therapy will be ended.

[0039] In this example, although all the speed performed extended operation about the same program in the mode and strength, as long as only strength of the mode is the same, it may be made to carry out extended operation.

[0040] Next, the case where this program is used for a chair type massage machine is explained based on drawing 5 . Since a chair type massage machine is well-known, it omits explanation.

[0041] Drawing 5 a is drawing showing the program of the base of this massage machine, and is started from the place which rolls a neck. The operation time of this actuation is set up in 1 minute here. And after this finishes, a therapy part starts actuation of a shoulder and a beat, and also operates this for 1 minute. And according to a sequential program, a therapy part and actuation change, and after a program is completed, massage actuation is ended.

[0042] Next, what is shown in drawing 5 b is directing to carry out continuous running of the therapy of the waist before therapy initiation a favorite therapy and here with an extended operation directions switch, and it is drawing having shown change of the program when starting a massage based on these directions, and when massaging the waist, twice as many time amount as the usual operating time is extended, and it operates.

[0043] Next, what is shown in drawing 5 c shows the case where an extended operation directions switch is operated at the time of the actuation sensed that a user is comfortable, while performing the massage by the basic program shown by drawing 5 a. In this case, the operating time of the massage actuation which was directing extension of operation time and was directed in massage actuation of massaging the shoulder in a program is extended. Moreover, after directing, time amount is extended

also about the same massage actuation performed, and it operates by twice as many time amount as the time amount set up by the program.

[0044] Thus, a refreshing therapy can be performed by directing extension of the operation time of the therapy actuation it is sensed that is comfortable with an extended operation directions switch.

[0045] Moreover, it can concentrate on a therapy by specifying therapy actuation carrying out extended operation before therapy actuation, without performing troublesome actuation during a therapy.

[0046] Furthermore, when extended operation of that therapy actuation carries out, this actuation that carried out time delay length and directed ** is outputted after that by operating an extended operation directions switch when sensing during a therapy that it is comfortable and the therapy sense that it is comfortable during a therapy is since it extends and operates at time amount longer than the setup time, it can treat for a long time and a refreshing therapy can carry out rather than usual.

[0047] It may not be especially twice and this example is available for it even 3 times and 4 times, although the operation time directed by the extended operation directions switch was set up by the twice of the programmed time amount. Moreover, extended operation time may set up extended therapy time amount according to the time amount which is pressing down the extended operation directions switch, and if it is pressing down for 1 second, even if a setup will be changed 3 usual times with it being for 5 seconds the usual twice, it is not cared about.

[0048]

[Effect of the Invention] In a therapy machine with the automatic course in which this invention performs therapy actuation based on the program as which it was determined beforehand with two or more parameters Since the control means which extends the operation time of the therapy actuation as which it was instructed in the program was established when it had an extended operation directions means to direct extension of the operation time of therapy actuation of arbitration and extension of operation time was directed by the extended operation directions means Since extension of the operation time of the therapy actuation sensed that a user is comfortable can be directed, a refreshing therapy can be performed.

[0049] Moreover, it can concentrate on a therapy by specifying the therapy actuation which wants to extend operation time before therapy actuation, without performing troublesome actuation during a therapy.

[0050] Furthermore, also when the actuation which extended the therapy actuation, operated and was directed performs by the subsequent program by operating an

extended operation directions means when sensing during a therapy that it is comfortable, it operates by time amount longer than the setup time. By this, when there is a therapy it is sensed during a therapy that is comfortable, it can treat for a long time than usual, and a refreshing therapy can be performed.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the therapy actuation explanatory view showing one example of this invention.

[Drawing 2] It is the top view of this body of a therapy machine.

[Drawing 3] It is the flow chart which shows actuation of this therapy machine.

[Drawing 4] It is the block diagram of this control circuit.

[Drawing 5] It is the therapy actuation explanatory view showing other examples of this invention.

[Description of Notations]

5 Extended Operation Directions Switch (Extended Operation Directions Means)

17 Microcomputer (Control Means)

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